REMARKS/ARGUMENTS

Applicant respectfully traverses and requests reconsideration.

The Examiner is thanked for the thorough examination and search of the subject.

All Claims are believed to be in condition for Allowance, and that is so requested.

Claims 1, 3, 8, and 12 have been amended.

Claims 11, 13, 14-17, 19, and 20-72 have been canceled.

The making FINAL of the Restriction requirement is noted. Non-elected Claims 20-72 are hereby canceled. A divisional application will be filed to Claims 20-72 once the elected Claims are allowed.

Claims 3 and 8 stand rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Base Claim 1 has been amended to clarify the following matters: (1) the antenna structure is made of conductive loaded resin-based material and (2) the conductive loaded resin-based material includes two components – micron conductive fiber and resin-based material. Amended Claim 1 now reads:

1. (Currently Amended) An integrated circuit device comprising:

an integrated circuit die fixably attached to a substrate and electrically connected to a metal trace on said substrate;

an encapsulating layer overlying said integrated circuit die and substrate; and

an antenna structure of conductive loaded resin based material ~~comprising micron conductive fiber in a resin host~~ overlying said encapsulating layer and directly contacting said metal trace through an opening in said encapsulating layer wherein said conductive loaded resin based material comprises micron conductive fiber in a resin-based material and wherein said micron conductive fiber has a diameter of between about 3 μm and about 12 μm and a length of between about 2 mm and about 14 mm.

In addition, dependent Claims 3 and 8 have been amended to make clear further limitations where the conductive loaded resin-based material further includes micron metal powder (Claim 3) or micron non-metal powder (Claim 8).

The present action indicates that the present application currently names joint inventors. This is not true. The present invention only names a single inventor, Thomas Aisenbrey.

Claims 1-10, 12-13, and 18 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Takahashi et al (US 5903239) in view of Endo et al (US 6165386). The Takahashi reference is directed to a device including an antenna device on a substrate. However, the Takahashi et al reference does not teach or suggest key features of the present invention. Takahashi et al do not teach or suggest at least the features of (1) forming an antenna structure on conductive loaded resin-based material, (2) forming the conductive loaded resin-based material of (a) micron conductive fiber and (b) resin-based material, and (3) where the micron conductive fiber has a diameter of between 3 μm and 12 μm and a length of between 2 mm and 14 mm.

The Endo reference is directed to the formation of antennas on a substrate by printing a conductive resin that includes a conductive powder. One embodiment (Figs. 11 and 12) is directed to integrating the conductive resin antenna 21 with an integrated circuit 23. However, the conductive resin of Endo does not include at least the following features of the present invention: (1) forming the conductive loaded resin-based material of (a) micron conductive fiber and (b) resin-based material and (2) where the micron conductive fiber has a diameter of between 3 μm and 12 μm and a length of between 2 mm and 14 mm. In particular, the conductive resin of Endo is only described as including conductive powder. No reference is made to the inclusion of any type of micron conductive fiber. The dimensions of the micron conductive fiber of the present invention indicate an aspect ratio of diameter-to-length of around 1:100. This is a key feature as it is not consistent with the metal powder described by Endo et al. While Endo et al describe metal powder diameters in the micron range, there is, however, no indication of metal powder lengths in the millimeter range. On the contrary, metal powder implies material pulverized to the point of very small size – diameter and length. By comparison, the micron conductive fiber of the present invention is only very small in diameter but not in length.

Applicant has amended Claim 1 to better distinguish the features of the present invention from those of the prior art. In particular, Amended Claim 1 makes clear features wherein (1) forming the conductive loaded resin-based material of (a) micron conductive fiber and (b) resin-based material and (2) where the micron conductive fiber has a diameter of between 3 μm and 12 μm and a length of between 2 mm and 14 mm. These features are not taught of suggested by the prior art of Takahashi et al in view of

Endo et al as applied in the present action.

In light of amended Claim 1 and the several features distinguishing applicant's claimed invention from the prior art, reconsideration of the rejection under 35 USC 103(a) is requested for Claim 1 and for the remaining depending claims.

Accordingly, Applicant respectfully submits that the claims are in condition for allowance and that a timely Notice of Allowance be issued in this case. The Examiner is invited to contact the below listed attorney if the Examiner believes that a telephone conference will advance the prosecution of this application.

Respectfully submitted,

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